

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 03/11288

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 E21C35/193

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 E21C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/45238 A (PARROTT GEORGE ALBERT ;MINNOVATION LTD (GB)) 10 September 1999 (1999-09-10) page 6, line 8 - line 12; figures 1,,5A	1-11
X	US 6 113 195 A (FULLER GARY A ET AL) 5 September 2000 (2000-09-05) column 2, line 52 - line 67	1-11
X	US 4 664 450 A (RADFORD LEONARD) 12 May 1987 (1987-05-12) column 7, line 61 -column 8, line 14	1-11
X	US 4 542 942 A (SCHETINA OTTO ET AL) 24 September 1985 (1985-09-24) column 3, line 47 - line 54	1-11
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EXPRESS MAIL NO. EV579066910 US

MAILED 27 June 2005

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

28 April 2004

Date of mailing of the international search report

07/05/2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 98/39553 A (BINGHAM ENGINEERING LIMITED ;BINGHAM MARK (GB); BINGHAM TERENCE (G) 11 September 1998 (1998-09-11) page 5, line 3 - line 31</p> <p>-----</p>	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/11288

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9945238	A	10-09-1999	AT 217386 T	15-05-2002
			AU 3262799 A	20-09-1999
			DE 69901436 D1	13-06-2002
			EP 1064453 A1	03-01-2001
			WO 9945238 A1	10-09-1999
			US 6382733 B1	07-05-2002
US 6113195	A	05-09-2000	AU 747606 B2	16-05-2002
			AU 1421400 A	26-04-2000
			BR 9915908 A	21-08-2001
			CA 2346458 A1	13-04-2000
			EP 1127214 A1	29-08-2001
			JP 2002526702 T	20-08-2002
			WO 0020723 A1	13-04-2000
			ZA 200102503 A	27-09-2002
US 4664450	A	12-05-1987	GB 2135715 A	05-09-1984
			AU 562228 B2	04-06-1987
			AU 2805784 A	21-11-1985
			EP 0160757 A1	13-11-1985
US 4542942	A	24-09-1985	AT 375149 B	10-07-1984
			AT 261582 A	15-11-1983
			AU 563360 B2	09-07-1987
			AU 1548483 A	12-01-1984
			CS 8303915 A2	15-08-1985
			DE 3362598 D1	24-04-1986
			EP 0099350 A1	25-01-1984
			ES 8404898 A1	01-09-1984
			HU 186331 B	29-07-1985
			IN 157043 A1	04-01-1986
			JP 1405978 C	27-10-1987
			JP 59008899 A	18-01-1984
			JP 62013479 B	26-03-1987
			PL 242712 A1	27-02-1984
			RO 89108 A1	30-04-1986
			SU 1284461 A3	15-01-1987
			YU 143183 A1	31-08-1986
			ZA 8304198 A	30-05-1984
WO 9839553	A	11-09-1998	EP 0970290 A1	12-01-2000
			WO 9839553 A1	11-09-1998